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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CHOWDHURY, SUMAIYA A	
ART UNIT	**PAPER NUMBER**
2623	
MAIL DATE	**DELIVERY MODE**
08/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/973,875	BUNN ET AL.	
	Examiner	Art Unit	
	Sumaiya A. Chowdhury	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9-15,17-22 and 24-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7, 9-15,17-22,24-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 7/2/07, with respect to claims 1, 2, 4-7, 9-15, 17-22, and 24-27 have been fully considered and are persuasive. The Office Action of 1/3/07 has been withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4-6, 9-10, 12-14, 17-21, and 24-27, rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman (6,438,123) in view of Geiger (5987022).

As for claim 1, Chapman's cable modem is DOCSIS compliant; it is inherent for the DOCSIS cable modem to have a MAC (34 – Fig. 3), a receiver coupled to the MAC, and a transmitter also coupled to the MAC. In this case, Chapman teaches generating a registration message (which is a MAC message; 54 - Fig. 4B, col. 5, lines 40-53) thereby equating to a media access control. Chapman additionally teaches receiving and transmitting the registration message (56 – Fig. 4B, col. 5, line 50 – col. 6, line 2) which reads on a receiver/transmitter portion coupled to said MAC.

Chapman discloses a cable modem (22 – Fig. 1), comprising:

wherein said media access control is adapted to generate a registration message (54 – Fig. 4B) that indicates support for a first protocol (RTP) by the cable modem (19 – Fig. 4B) and wherein said transmitter portion is adapted to transmit said registration message to a cable modem termination system (18 – Fig. 4B; col. 5, lines 40-53);

wherein said receiver portion is adapted to receive a response (56 – Fig. 4B) to said registration message from said cable modem termination system and to provide said response to said registration message to said media access control, said response to said registration message indicating whether or not said first protocol is supported by a cable modem termination system – col. 5, line 63 – col. 6, line 2, col. 4, lines 60-67; and

wherein said media access control is further adapted to format data for transmission to said cable modem termination system in accordance with said first protocol (RTP) if said response to said registration message indicates said first protocol is supported by said cable modem termination system, and to format data for transmission to said cable modem termination system in accordance with a default protocol (DOCSIS) if said response to said registration message indicates said first protocol is not supported by said cable modem termination system - col. 5, line 63 – col. 6, line 2, col. 4, lines 60-67.

However, Chapman fails to teach wherein:

A plurality of header suppression techniques

Geiger, in the same field of endeavor, teaches a plurality of header suppression techniques (i.e. use first header suppression technique 407, second header suppression technique 411, third header suppression technique 417; fig. 4); and selecting a header suppression technique from the plurality of header suppression techniques for each of the identified packets (col. 3, lines 7-10, col. 4, lines 20-57, col. 5, lines 6-16)

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Chapman's invention to include the above mentioned limitation, as taught by Geiger, for the advantage of allowing maximum performance.

As for claims 4, 9, 17, and 24, Chapman and Geiger disclose the claimed limitations. In particular, Chapman discloses wherein said registration message is a DOCSIS REG-REQ message and wherein said response to said registration message is a DOCSIS REG-RSP message (Fig. 4B, col. 5, lines 50-63).

As for claims 5 and 20, Chapman and Geiger disclose the claimed limitations. In particular, Chapman discloses wherein said data (audio packet) comprises a data packet – col. 6, lines 28-67.

As for claim 6, Chapman's CMTS is DOCSIS compliant; it is inherent for the DOCSIS CMTS to have a MAC (34 – Fig. 3), a receiver coupled to the MAC, and a transmitter also coupled to the MAC. In this case, Chapman teaches receiving a registration message (which is a MAC message; 54 - Fig. 4B, col. 5, lines 40-53) thereby equating to a media access control. Also, Chapman teaches receiving and transmitting the registration message (56 – Fig. 4B, col. 5, line 50 – col. 6, line 2) which reads on a receiver/transmitter portion coupled to said MAC. It is inherent for the CMTS to have a memory coupled to the MAC in order to process the registration messages.

Chapman discloses a cable modem termination system (18 – Fig. 1), comprising:

wherein said receiver portion is adapted to receive a registration message (54 – Fig. 4B) from a cable modem and to provide said registration message to said media access control, said registration message designating a first data transfer protocol or a second data transfer protocol supported by said cable modem (The receiver of the CMTS receives the registration message, and then forwards it to the MAC. The message indicates the data transfer protocol that it supports. If Header Suppression protocol (RTP) is supported, the CMTS transmits a message back to the cable modem that it supports the RTP. Otherwise, the CMTS indicates that is does not support RTP. - col. 5, lines 50-67);

wherein said media access control is adapted to assign a cable modem identifier (SID) to said cable modem and to associate said cable modem identifier with a protocol indicator in said memory, said protocol indicator indicating said data transfer protocol

designated by said registration message – (81 & 83 – Fig. 7B; The CMTS has memory to process the DOCSIS REG-REQ message. The memory in the CMTS has SIDs to associate with protocol indicators which indicate which protocol is supported by the cable modem - col. 6, line 63 - col. 7 line 6, col. 8, lines 8-9);

wherein said transmitter portion is adapted to transmit said cable modem identifier (SID) assigned by said media access control to said cable modem – (The CMTS responds to the cable modem's request by transmitting a response which includes the SID such that the message is routed to the proper cable modem. - col. 7, lines 5-11);

wherein said receiver portion is further adapted to receive a request for transmission opportunity from said cable modem and to provide said request for transmission opportunity to said media access control, said request for transmission opportunity including said cable modem identifier (The cable modem sends a request in the registration message for transmission opportunity which is forwarded to the MAC of the CMTS. In the request, the SID (cable modem identifier) is included to identify the cable modem – col. 6, line 63 – col. 7, line 5, col. 2, lines 30-35); and

wherein said media access control is further adapted to allocate a transmission opportunity to the cable modem in response to said request for transmission opportunity, to use said cable modem identifier from said request for transmission opportunity to access said protocol indicator in said memory, and to process data transmitted by said cable modem during said allocated transmission opportunity in

accordance with said first data transfer protocol if said first data transfer protocol is indicated by said protocol indicator, and process data transmitted by said cable modem during said allocated transmission opportunity in accordance with said second data transfer protocol if said second data transfer protocol is indicated by said protocol indicator (After the CMTS receives a request from the CM for transmission opportunity, the CMTS responds to the CM and indicates if it does support the first protocol (RTP). If not, the CMTS will indicate so, and the CM will transmit according to DOCSIS protocol (2^{nd} data transfer protocol). When the CMTS receives the request which includes the SID, it looks up the protocol indicator in its memory. - col. 5, line 50 – col. 6, line 2, col. 4, lines 60-67).

However, Chapman fails to teach wherein:

A plurality of header suppression techniques

Geiger, in the same field of endeavor, teaches a plurality of header suppression techniques (i.e. use first header suppression technique 407, second header suppression technique 411, third header suppression technique 417; fig. 4); and selecting a header suppression technique from the plurality of header suppression techniques for each of the identified packets (col. 3, lines 7-10, col. 4, lines 20-57, col. 5, lines 6-16)

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Chapman's invention to include the above mentioned limitation, as taught by Geiger, for the advantage of allowing maximum performance.

As for claims 10 and 25, Chapman and Geiger disclose the claimed limitations. In particular, Chapman discloses wherein said cable modem identifier is a DOCSIS Service ID – col. 3, lines 63-65, col. 4, lines 60-65.

As for claims 12 and 26, Chapman and Geiger disclose the claimed limitations. In particular, Chapman discloses wherein said receiver portion is adapted to receive said request for transmission opportunity from said cable modem in the contention area of a first DOCSIS map allocation message, and wherein said media access control is adapted to allocate said transmission opportunity to said cable modem in a second DOCSIS map allocation message – col. 3, lines 63-65.

As for claims 13 and 27, Chapman and Geiger disclose the claimed limitations. In particular, Chapman discloses wherein said media access control is adapted to associate said cable modem identifier (SID) with said protocol indicator (index) in said memory by storing said cable modem identifier and said protocol indicator as associated values in a look-up table in said memory, and wherein said media access control is adapted to use said cable modem identifier from said request for transmission opportunity to access said protocol indicator in said memory by using said cable modem identifier to access said protocol indicator in said look-up table in said memory (The CMTS looks up in its memory the index which it sends to the CM. The index identifies the particular protocol associated with the CM. – col. 4, line 60 – col. 5, line 8).

Claim 14 contains the limitations of claim 1 and is analyzed as previously discussed with respect to that claim.

Claim 18 contains the limitations of claims 1 and 6 and is analyzed as previously discussed with respect to those claims.

As for claim 19, Chapman and Geiger disclose the claimed limitations. In particular, Chapman discloses receiving said data from a user device prior to formatting said data for transmission to the cable modem termination system. At the subscriber location (22 – Fig. 1), the cable modem (19 – Fig. 1) receives data/commands from the user device connected to the cable modem and formats the data according to the particular protocol for transmission to the CMTS – col. 3, lines 50-58.

Claim 21 contains the limitations of claim 1 and claim 6 and is analyzed as previously discussed with respect to those claims. Claim 21 additionally calls for the following:

processing data transmitted by the cable modem during said allocated transmission opportunity in accordance with said first data transfer protocol if said first data transfer protocol is indicated by said protocol indicator (Fig. 7B; col. 6, lines 62 – col. 7, line 6); and

processing data transmitted by the cable modem during said allocated transmission opportunity in accordance with said second data transfer protocol if said second data transfer protocol is indicated by said protocol indicator (Fig. 7A; col. 6, lines 45-54).

1. Claims 2, 7, 15, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Geiger as applied to claim 1 above, and further in view of Horton (6788707).

As for claims 2, 7, 15, and 22, Chapman teaches wherein the default protocol is DOCSIS but fails to teach a DOCSIS header suppression technique.

In an analogous art, Horton teaches wherein DOCSIS PHS is used in a cable modem and CMTS environment by suppressing bytes from the payload header before transmission in order to conserve bandwidth – col. 9, lines 35-50.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Chapman and Geiger's invention to include a DOCSIS header suppression technique, as taught by Horton, for the advantage of conserving bandwidth.

2. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman and Geiger as applied to claim 6 above, and further in view of Sawyer (6765925).

As for claim 11, Chapman and Geiger fail to disclose wherein said memory is a random access memory.

In an analogous art, Sawyer discloses wherein the memory in the CMTS is random access memory for the advantage of having volatile memory such that it could constantly be updated with address data – col. 4, lines 39-53.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Chapman and Geiger's invention to include wherein said memory in the CMTS is random access memory, as taught by Sawyer, for the advantage of having volatile memory such that it could constantly be updated with address data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sumaiya A. Chowdhury whose telephone number is (571) 272-8567. The examiner can normally be reached on Mon-Fri, 9-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAC

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